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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Steven J. Eberbach March 25, 2004

Serial No.: 09/153,831 **Art Unit:** 2644

Filed: 09/15/1998 NON-COMPLIANT **Examiner:** Ping Lee

For: SURROUND SOUND LOUDSPEAKER SYSTEM

4-1-04

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Do Not

RESPONSE TO EXAMINER'S ACTION DATED DECEMBER 1, 2003

Sir:

Claims 1 and 2 have been rejected as indefinite, claim 1 has been rejected as anticipated by Gefvert, and claims 1 and 2 have been rejected as anticipated by McShane. Reconsideration is respectfully requested in view of the attached amended claims and following comments.

There has clearly been some confusion as to which embodiments of applicant are encompassed by claims 1 and 2.

Claims 1 and 2 as originally filed and as amended are directed to the embodiment of FIGs. 12a and 12b as described in the specification at the bottom of page 26 and top of page 27 and FIGs. 37 and 38 as described in the specification at the bottom of page 34 and top of page 35 (wherein the addition of a center driver, FIG. 31, is discussed as an alternative). In a home theater environment nothing more than a subwoofer directly below the head unit of FIG. 12 is needed to fill the room with sound seemingly from all directions.

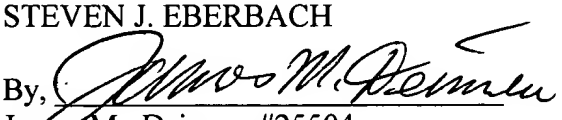
In a movie theater or auditorium setting including outdoor (wall-less) auditorium, multiple units can be employed as shown in FIG. 39 and explained further on page 35.

As is shown in FIG. 12b the two asymmetric hypercardioids 138 and 140 emanating from the array of drivers in the single loudspeaker 134 are mirror images produced when identical electrical signals are imposed in each of the two channels. While described in terms of asymmetric hypercardioids in FIG. 12 the two sound fields can be more generalized as shown in FIGs. 37 and 38 and as defined in claims 1 and 2 of the applicant. Neither Gefvert nor McShane teach a single loudspeaker producing mirror image sound fields with maxima and minima less than 180° apart and complementary in each sound field through the angle between the sound fields of the single loudspeaker. Therefore, the limitations in claims 1 and 2 distinguish over Gefvert and McShane.

Dependent claims 3 through 17 define further limitations shown in FIGs. 12, 13 through 22 and 37 through 39. It should be noted that "angle 252" in the second line from the bottom on page 34 is a typographical error and should be "angle 254" as shown in FIG. 37. An amendment to the specification is attached. Angle 254 is also indicated by the arrows in FIG. 12b. In a production version of this technology a single loudspeaker unit about 20" across, 6" high and 12" deep plus a subwoofer unit directly below completely fills a home theater area about 12' across and 18' long in front of the loudspeaker with surround sound. More than two million dollars worth of these units were manufactured and sold.

Respectfully Submitted,

STEVEN J. EBERBACH

By, 

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